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## (54) INK JET HEAD AND MANUFACTURE THEREOF

## (57) Abstract:

**PURPOSE:** To enhance response characteristics by heating/cooling to enable high speed printing by forming a plurality of fins alternately combined on the side of the substrate of a buckling structure and on the side of the buckling structure of the substrate and always opposing the fins each other at a narrow interval at least on the single side of them.

**CONSTITUTION:** When voltage is applied to an electrode 14a, a buckling structure 1 is heated by the resistance heating of a heater 3 to extend in its longitudinal direction. However, since the end part in the longitudinal direction of the structure 1 is fixed to a substrate 7 and the structure 1 can not extend, compression force  $P_0$  being reaction force is generated and accumulated in the structure 1 and, when the compression force  $P_0$  exceeds buckling load, the structure 1 gener-

ates buckling deformation. When the structure 1 is deformed toward a nozzle plate 10 at its central part, the diaphragm 5 connected to the structure 1 is deformed toward the plate 10. Therefore, ink 17 is pushed out of a nozzle 11 and an ink droplet is formed to the outside of an ink jet head and injected to apply printing to a printing surface. Next, a current is cut off and the structure 1 is cooled to return a standby state.

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